

**“Library 3.0: the art of Virtual Library services”**

Ali K. AlEnezi  
Kuwait University

Supervisor:  
Dr. Taghreed Alqudsi-ghabra

18 of January, 2012

## **Library 3.0: the art of Virtual Library services**

### **Introduction**

Libraries are changing and customer demands are changing too. Staffing levels, service models, access to resources, and services to the public are changing accordingly. Administrators are seeking more efficient ways of delivering services to achieve greater returns on financial investments.

Web 3.0 is third generation of the web. Web 3.0 brings us great technologies such as semantic web, cloud computing, mobile devices, new social media applications and new search technologies. Library 3.0 refers to libraries using Web 3.0. The end result of Library 3.0 is collections that can be made readily available to library users regardless of their physical location. Library 3.0 is a virtual complement to physical public library spaces, and ideally will work seamlessly within established public library services and collections. With Library improvement,

Libraries are trying to adopt Web 3.0 into their services through methods such as Resource Description and Access (RDA) tags, metadata and other semantic web developments. The semantic web has changed the face of the Internet, and will continue to change and develop the way libraries conduct their online services such as OPACs and federated searching. Due to (Mi & Nesta, 2011) Library 3.0 must lead rather than follow and it must innovate, rather than copy.

Librarians must improve as well. They must know how to deal with mobile technology, social media, dynamic web, widgets and filtering. Librarians working in Library 3.0 environment are called Librarians 3.0

Library 3.0 is more than a building; it is a new philosophy of service and engagement for our community. It will be a place to interact; a place to innovate; a place to inspire.

The author review papers discussed Web 3.0, Web 3.0 technologies, Library 3.0 and Librarian 3.0.

### **Web 3.0**

In order to understand Library 3.0, the author starts with information about Web 3.0. Web 3.0 is considered as portable, personal web, focused on the individual, on a timeline, on consolidating content, and which is powered by widgets, drag and drop, and tags of user engagement. (Green, 2011) states “Web 3.0 represents an evolutionary shift in how people interact with the web, and vice versa”. The next generation of the web, Web 3.0, includes the concepts of semantic web, the mobile web, and the immersive Internet. The increasing trend to provide web experience through more versatile mobile devices is expected to extend to learning as well. Semantic web that understands the meaning of data and uses natural language searches, which enables finding and interacting with the right content and subject matter experts more easily. In addition to that, using virtual worlds, simulations, augmented reality, and multiplayer gaming technologies for learning are among the visions associated with Web 3.0.

The writer starts with defining what Web 3.0 is and what components it has. Then, he explains what these components are and how they are currently used in training and employee development. Also he sets out the implications of using Web 3.0 for organizational learning, including the impact on training content and training delivery. At the end, the writer reviews the benefits that Web 3.0 technologies will offer for learning and development.

According to (Laurent, 2011) “Web 3.0 will not result in a huge paradigm shift or a gilded age of computing”. With Web 3.0, the Internet can finally realize elaborate and complex virtual worlds, where social interaction drives business operations. In this paper, the writer discusses Web 3.0 technologies and how they are different from Web 2.0. Also he provides examples of Web 3.0 technologies and how they will be used.

### **Web 3.0 technologies**

Web 3.0 technologies will improve the uses of library collection. The author review articles about web 3.0 technologies to understand the web 3.0 uses. According to (Hendler, 2009) “We can thus essentially view Web 3.0 as semantic Web technologies integrated into, or powering, large-scale Web applications”. In this technical paper, writer provides information about Web 3.0 application and how try are integrated with web frameworks. Also he provides information about sematic search technology and social networking-applications.

Web 3.0 will shift the use of the web to a bigger stage. (Hendler, 2010) stats that “One of the difficulties in explaining Web 3.0 is that, unlike the original Web browser or later Web 2.0 systems, Semantic Web technology tends to be an infrastructure technology”. In this paper, writer provides information about Web 3.0 technology and how will these technologies help academic researchers. He provides some examples about how these technologies can help also. Semantic web will provide us with the option to share, unite, search and organize the web information in easy manner. Sharing and organizing information available in every corner of the web, which is the main aim of this generation and expected to be achieved with the help of semantic web technologies.

### **Library 3.0**

Library 3.0 is more than a building. Libraries will provide information for their user wherever they are using the technology of Web 3.0. (Mi & Nesta, 2011) says “Library 3.0 must lead rather than follow and it must innovate, rather than copy”. Library 3.0 must find ways to index and connect to all the new information that the web enables us to access. This paper aims to present a critical review of “Web 2.0” and “Library 2.0” applications and proposal of a redirection of resources towards semantic web developments. It also discusses Library 3.0 issues. The writes started with an introduction about Library 2.0 and Web 2.0. Then they conducted some literature review. After that, they mention the methodology they used in their paper.

Then, (Mi & Nesta, 2011) provides some information about Library 3.0. They mentioned, “Library 3.0 will be an integral part of the semantic web which Berners-Lee sees as the next step in the development of the web, with computers talking to computers, libraries talking to libraries, OPACs talking to OPACs. This is, after all, what libraries do and where libraries can be leaders, employing the scale of many libraries and institutions to advantage”. The author agrees with that idea. Library 3.0

must be like what they mentioned. In the end, (Mi & Nesta, 2011) provides some information about Web 2.0 applications use by libraries.

Libraries need to change the way they interact with users. According to (Mason, 2011) In Library 3.0 the library comes to the patron, it is proactive and interactive. The rest of the book describes the various technologies that can empower the library to do this. In this article, the writer is reviewing “Building Library 3.0: Issues in Creating a Culture of Participation” Book by Woody Evans. The book by Woody Evans discusses how the information was in Library 1.0 and Library 2.0. The book also provides information about Web 1.0, 2.0, and 3.0. The writer suggests that libraries must know how to use new technologies and how to integrate them. The book suggests how this can be done. As David Mason said “It starts with the flagship technology of Web 2.0, blogs. Blogs are the exact-opposite of traditional libraries – they are colorful, noisy, free wheeling, opinionated, interactive, open, uncensored and free.” The book also provides information about free resources for hands-on experience of each technology. (Evans, 2009)

### **Virtual reference service**

In virtual reference service, apart from helping the users in person or through telephonic ways, librarians are now developing the contents that can easily be transferable and readable in cellphones and other mobile devices to help the users at any point of time. According to (Pinto & Manso, 2012) “Virtual Reference Services is a service that, based on the experience of traditional services developed within an information technology environment, satisfies user’s information and knowledge needs in an interactive, participative, customized, and collaborative way”.

### **Librarian 3.0**

Library 3.0 needs librarians with skills to handle these technologies. (Saw & Todd, 2007) state that “Library 3.0 is just around the corner – so what are the selection criteria for Library 3.0 workers?” This paper presented at the 73<sup>rd</sup> IFLA General Conference and Council. The writers explore issues and challenges in keeping up with new technologies and the trends that will occur in Library 3.0, and asks about how can libraries learn from other service industries, and how will librarians keep up with subject specific skills.

The writers started with information about Library 3.0 and information about Librarian 3.0. Libraries must ensure that their library staff is ready for Library 3.0. Then they discuss Library 3.0

drivers. The journey to Library 3.0 will requires some “drivers” as they think. These drivers are: Technology, user behavior, and workplace.

In Library 3.0 is not only to provide the service to the people but it serves the user with various services. They should know how to get the requested information and make it available to the user without being concerned about the location. They should also help the users to make use of the given information. Librarians will have to work on alternative way of providing information if one mode of communication fails. Then (Saw & Todd, 2007) moved to barriers for change. After that, they mention some information about how to get ready for library 3.0.

Librarians or library staff of the future will have to be prepared for lifelong learning. Some library staff may not be library trained so continual professional development will be part of their everyday work.

### **User-generated content**

Part of the strength of the semantic web for libraries is that it allows library users to become resources themselves. A library OPAC/website was previously a one-on-one experience, but can now be a “many to many” interaction. According to (Burke, 2009) the semantic web converts web pages from being readable and displayable by computers to being understandable by computers.

Based on (Rah & Gul & Wani, 2010) the semantic web (also called Web 3.0) is beginning to empower and energize content on the web and its basic principles and technologies can energize and enhance the long-standing knowledge-management discipline. The study evolves into a model web based knowledge management system catering for the needs of the users in the present bit and byte world. Libraries, like other organizations, can benefit from semantic web initiatives. The semantic web allows a person, or a computer, to start in one database, and then move through an unending set of connected databases. Rather than just identifying keywords and expressions, the semantic web concentrates on identifying the meaning of content. This technical paper provides information about how to use knowledge management to provide good service for users.

(Bosque & Leif & Skarl, 2012) state that Twitter is a social networking platform that allows users to broadcast short messages of no more than 140 characters. This limitation creates the need for quick, to the point messages that must be poignant, as well as informative. This paper is an overview

of how libraries are using Twitter in an academic setting. There is a great deal of potential to increase the usage of social media technology. Libraries can benefit from user-generated content.

### **Mobile libraries**

Library 3.0 will provide the academic libraries with the opportunity to be in their student's pocket. Today's students are using the mobile technology always. The need to see the library website with mobile screen dimensions. According to (Wilson & McCarthy, 2010) the mobile revolution is upon us. Library must move toward mobile development. Internet users. Libraries must prepare a strategic plan to use the mobile library to market their service. (Wilson & McCarthy, 2010) illustrates how library services can be adapted to the mobile environment and how the library can play a role in broader campus mobile initiatives.

This paper can be a good resource for libraries to start their mobile library. The writers provide some great information and examples for mobile library. A survey performed by the Ryerson University Library indicated that 80% of students would have mobile phone in the next years..

(Cummings & Merrill & Borrelli, 2010) says "Library services have changed with the transformations in computing and networking". The uses of handheld mobile computing devices such as PDAs and web-enabled cell phones are increased. Libraries must investigate its impact on their collection and the services they provide. This paper provides information about the nature of handheld mobile computing use by academic library users and to determine whether there is a significant demand for using the library services with these small screen devices.

### **Mobile OPACs**

Having a mobile OPAC is a great step for the library. Students will not like the current OPAC because it is not compatible with mobile screen dimensions. (Murray, 2010) states that "Mobile OPACs, or MOPACs, provide library users with varying degrees of access to the information contained in traditional OPACs, and tend to be available as either transcoded web sites formatted for handheld devices or as standalone, downloadable applications". This paper provides information about mobile technology and to inform librarians about the following seven mobile initiatives: Library Web sites; SMS Reference; MOPACs (Mobile OPACs) and Integrated Library Systems; Mobile Collections; eBooks and Mobile Reading; Mobile Instruction; Mobile Audio/Video Tours. Any library

want to get mobilized will be some great information is this paper. The paper has much information that can help library to get benefit of using mobile technology.

### **Short messaging service (SMS)**

Where there is no Internet, SMS is the best tool to know library services. (Frantz & Tucker-Raymond, 2011) says “SMS become a tool widely used by libraries in providing reference services”. This paper discusses the unique nature of text messaging queries. It provides some SMS programs and websites. SMS is great solution for Students. Students can use SMS to get information about library location, working hours, or available services. Text a librarian is great tool where patrons can get information about library.

### **Quick response codes (QR)**

Libraries need to market their services. A Quick Response codes is the best tool for that. Based on (Massis, 2011) A QR code is an alternate terminology for a “Quick Response” or “2D” barcode that can be read by downloadable smart phone readers with camera-scanning capabilities. This Review paper examines the use of quick response (QR) codes in libraries and the variety of uses suggest specific uses of this motivating technology for libraries to enhance their own offerings to users with greater potential and possibilities. The writer started with QR definition then moved to how can content be download by this code. After that, he provides other examples of QR code use. QR is good tool where library can market their services such as; search, ask us, hours and locations, computer availability, video tutorials, and social media using this code. User will take a picture of the code and then he/she can access any library service they want.

### **Cloud computing**

Library 3.0 needs high technology tools and staff. Cloud computing is the best for the libraries who cannot afford technology and staff. According to (Yang, 2012) Cloud computing falls into several commonly acknowledged categories: software as a service (SaaS), hardware as a service (HaaS) or platform as a service (PaaS), and infrastructure as a service (IaaS). This paper discusses the latest information on cloud computing in a library context. The writer start with define what is cloud computing. Then he mention the types of cloud computing. Then he moved to advantages and



disadvantages of cloud computing. After that we moved to discuss the cloud computing use in libraries. “The cloud-based new generation of ILS allows many libraries to share useful data”.

The Cloud is the new generation of the information technology. Based on (Romero, 2012) Cloud computing, also known as “The Cloud”, is a highly scalable platform promising quick access to hardware and software over the Internet, in addition to easy management and access by non-expert users. The article describes the features of cloud computing, how it can be used in a professional environment, and its benefits and drawbacks. The writer provides information about drawbacks of cloud computing which any librarian must know before moving to cloud. Then he mentions information about the use of cloud computing in automation. Libraries will get benefit of cloud computing and its features.

### **GeoTagging**

Geotagging helps users to find specific information located at specific location. According to (Urban, 2010) Tito Sierra and Markus Wust, both from North Carolina State University Libraries were able to create virtual campus tour using geotagging (tagging specific locations on a map) and geolocation (pin-pointing your exact location) technologies. The writer said “Librarians must utilize new and upcoming technologies in order to reach twenty-first century learners” which author is highly recommend that.

## Conclusion

In the end, Libraries are changing fast and constantly. Customer demands are changing, service models, access to resources, and services to the public. Library users are seeking more efficient ways of getting information. Library 3.0 is user-centered and a virtual complement to physical public library spaces. Libraries of the future will act like high-tech services companies, mini Google focused on a particular demographic and physical footprint.

Libraries using Library 3.0 model will have the opportunity to be with user anywhere. You can call it Library in pocket. I think Library 3.0 is great development for libraries. Mobile Libraries and Virtual libraries are the next generation of Libraries.

In my review, I was unable to find information about Kuwait, so I visited ACK, AUK, GUST, and Al-Babtain library. I found out that only Al-Babtain Library in Kuwait is using some Library 3.0 technologies while others are not involved. Al-Babtain Library has their own mobile application and they are trying to improve their website.

IPhones and Samsung applications would be great tools to market library services as well as mobile site. I highly recommend Libraries in Kuwait to shift their services to Library 3.0. This model will help public libraries in Kuwait to get more users. They can have an application to market their services to users in Kuwait. Librarian also must improve their skills to be ready for Library 3.0. All in all, Library 3.0 will help libraries to improve and market their services well.

## References

- Bosque, D., & Leif, S., & Skarl, S. (2012). Libraries atwitter: trends in academic library tweeting. *Reference Services Review*, 40(2), 199 – 213.
- Cummings, J. & Merrill, A., & Borrelli, S. (2010). The use of handheld mobile devices: their impact and implications for library services. *Library Hi Tech*, 28(1), 22 – 40.
- Evans, W.(2009). *Building Library 3.0: Issues in Creating a Culture of Participation*. Chandos Publishing.
- Frantz, P., & Tucker-Raymond, C. (2011). Integrating text messaging into reference services. *Library HiTech News*, 28(5), 8 – 9.
- Hendler, J. (2010). Web 3. 0: The Dawn of Semantic Search. *Computer*. 43(1), 77-80.
- Hendler, J. (2009). Web 3.0 Emerging. *Computer*. 42(1), 111-113.
- Laurent, W. (2010). Where We're Headed with Web 3.0: Not a gilded age or paradigm shift, but social interaction will increasingly drive business. *Information Management*, 20(4), 40.
- Green, M. (2011). Better, smarter, faster: Web 3.0 and the future of learning. *Development and Learning in Organizations*, 25(6).
- Massis, B. (2011). QR codes in the library. *New Library World*, 112(9/10), 466 – 469.
- Mason, D. (2010). Building Library 3.0: Issues in Creating a Culture of Participation. *Electronic Library*, 28(2), 347 – 348.
- Nesta, F., & Mi, J. (2011). Library 2.0 or Library III: returning to leadership. *Library Management*, 3(1), 85 – 97.
- Murray, L. (2010). Libraries like to move it, move it. *Reference Services Review*, 38(2), 233 –249.
- Pinto, M. & Manso, R. (2012). Virtual references services: defining the criteria and indicators to evaluate them. *Electronic Library*, 30(1), 51 – 69.
- Rah, J., & Gul, S., & Wani, Z. (2010). University libraries: step towards a web based knowledge management system. *VINE*, 40(1), 24 – 38.
- Romero, N. (2012). Cloud computing in library automation. Benefits and drawbacks. *The Bottom Line: Managing Library Finances*, 25(3).
- Yang, S. (2012). Move into the Cloud, shall we?. *Library Hi Tech News*, 29(1), 4 – 7.
- Saw, G. and Todd, H. (2007). Library 3.0: where art our skills. paper presented at the 73<sup>rd</sup> IFLA General Conference and Council, 19-23 August, Durban, South Africa, available at:[archive.ifla.org/IV/ifla73/papers/151-Saw\\_Todd-en.pdf](http://archive.ifla.org/IV/ifla73/papers/151-Saw_Todd-en.pdf).

Urban, S. (2010). Technology, cognition, and the academic librarian: a conference report.

*Library Hi Tech News*, 27(4/5), 1 – 4.

Wilson, S., & McCarthy, G. (2010). The mobile university: from the library to the campus.

*Reference Services Review*, 38(2), 214 – 232.